

Glossary

a:Si	Amorphous silicon
Active center	Location of the unpaired electron on a free radical, where reactions take place.
Alignment layer	A layer and/or surface treatment applied to the boundary of a liquid crystal cell to induce a particular director orientation. For example, a layer of polyimide buffed in one direction induces alignment parallel to the buffing direction, or a surfactant may be polymerized on a boundary surface to induce perpendicular alignment.
AMLCD	Active-matrix liquid crystal display
Amorphous	Irregular; having no discernible order or shape. In the context of solids, the molecules are randomly arranged, as in glass, rather than periodically arranged, as in a crystalline material.
Amorphous polymers	A glass-like structure with tangled chains and no long-range order.
Amphiphilic	A molecule with a hydrophilic head and a hydrophobic tail (i.e., a molecule that has one end that attracts water and one end that repels water).
Anisotropic	Having properties that vary depending on the direction of measurement. In liquid crystals, this is due to the alignment and the shape of the molecules. Dielectric anisotropy means different dielectric strengths along different axes, and refractive anisotropy means different refractive indices along different axes.
APCVD	Atmospheric pressure chemical vapor deposition
Aquadag	An aqueous conductive coating found on the faceplate.
Backbone	The main structure of a polymer onto which substituents are attached.
Biaxial	Possesses two directions along which monochromatic light vibrating in any plane will travel with the same velocity.
Birefringence	Also called double refraction. The property of uniaxial anisotropic materials in which light propagates at different velocities, depending on its direction of polarization relative to the optic axis.
Block polymers	Polymers composed of two or more connected sequences (blocks) of homopolymers.
BOM	Bill of materials
Buffing	To give the inner glass surfaces of a liquid crystal cell a texture, in order to align the liquid crystal molecules in a certain direction parallel to the surfaces.
CCFT	Cold cathode fluorescent tube
Chain polymer	A polymer in which the repetition of units is linear. The

	monomers are linked end to end, forming a single straight polymer.
Chiral Nematic	Similar to the nematic phase; however, in the cholesteric phase, molecules in the different layers orient at a slight angle relative to each other (rather than parallel, as in the nematic). Each consecutive molecule is rotated slightly relative to the one before it. Therefore, instead of the constant director of the nematic, the cholesteric director rotates helically throughout the sample.
COB	Chip-on-board
COF	Chip-on-film
COG	Chip-on-glass
Convergence	The ability of an electron beam to hit the correct phosphor dot.
Cross-linking	A process in which bonds are formed joining adjacent molecules. At low density, these bonds add to the elasticity of the polymer. At higher densities, they eventually produce rigidity in the polymers.
CRT	Cathode ray tube. A glass vacuum tube used in televisions and monitors.
Cullet	Broken glass from CRT
CVD	Chemical vapor deposition
DfE Program	EPA's Design for the Environment Program
Dielectric	A material that is inserted between the plates of a capacitor to increase its effective capacitance.
Dot pitch	The vertical distance between the centers of adjacent pixels. Dot pitch is an important determinant in the clarity of a color monitor.
E/S	Etch stop
EOL	End-of-life
FPD	Flat panel display
Frit	Solder glass made of lead oxide, zinc oxide, and boron oxide, mixed with nitrocellulose binder and amyl acetate to form a paste.
Gate	Control terminal of a thin-film-transistor.
Grille dag	A coating of contrast-enhancing material applied to the faceplate.
IC	Integrated circuit
IPS	In-plane switching
Isotropic	Disordered and without any preferred direction.
ITO	Indium tin oxide
LCD	Liquid crystal display
Liquid crystal	A thermodynamic stable phase characterized by anisotropy of properties without the existence of a three-dimensional crystal lattice, generally lying in the temperature range between the solid and isotropic liquid phase.

Mesomorphic substance	Another term for a liquid crystal material.
MIM	Metal-insulator metal
Monochromatic light	Light composed of only one specific wavelength.
Nematic	Liquid crystals are characterized by long-range orientational order and the random disposition of the centers of gravity in individual molecules. Nematics may be characterized as the simplest spontaneously anisotropic liquids.
NMP	N-methyl pyrrolidinone
OEM	Original equipment manufacturer
p:Si	Polycrystalline silicon
Passivation	A thin-film protective layer that is applied to a glass substrate prior to LCD fabrication. It makes the surface “passive” in that no ions can migrate from the glass to the silicon film.
PECVD	Plasma-enhanced chemical vapor deposition
Phosphors	Luminescent materials
Photoresist	A photosensitive polyimide resin
PMLCD	Passive matrix liquid crystal display
Polyimide	A cyclopolymerized organic material capable of withstanding high temperatures (at least 300°C).
Polymer liquid crystals	Polymers that contain mesogen units and thus have liquid crystal properties.
PVD	Physical vapor deposition
PWB	Printed wiring board
Slurry	A thin paste that has solids suspended in liquids.
STN	Super-twisted nematic, a passive-matrix LCD technology
TAB	Tab automated bonding
TFT-LCD	Thin film transistor liquid crystal display
TMAH	Trimethylamine hydrochloride